

of the female being invariably devoid of such enlargement, it very much interested me to see that in the present species, while the male retained the normal and characteristic structure of this organ, the female enjoyed the same appendage, and that in a degree only slightly less developed. In either sex the trachea is somewhat enlarged above the *bulla ossea*, and then, as usual, rapidly tapers; and in both the *bulla ossea* is outwardly of the same general form as it is in the male of *Anas boschas*, Linn. I have inquired of Mr. Bartlett whether any peculiarity was observed in the call-note of the female bird during her captivity in our Gardens, but I cannot learn that such was the case.

I abstain from making any comments on the curious fact I have mentioned, which is, so far as I am aware, unique; but it would be easy to enter upon some speculations as to its bearings on the important question of "Sexual Selection" which is now being agitated. I will, however, say that, though I know not how far other ornithologists are likely to agree with me, I conceive that, if we wish for a natural subdivision of the two large groups of *Anatidæ* formed by what are generally termed the *Anatinæ* and *Fuliginæ*, the characters afforded by the trachea ought to be fully studied; and I venture to refer to some suggestions on that question which I published some years ago in America\*. It should be one of the first objects of every collector in foreign countries to examine the trachea of each bird that he skins; and nowhere is this more necessary than with members of the *Anatidæ*.

I am much averse to inventing new groups; but I think it very possible that this species, being thus shown to differ so singularly from any Duck with which we are acquainted, will be made the type of a new genus or subgenus; and as some enthusiast may wish when conferring a name on a section so established to celebrate that of some notable person of the gentler sex who is gifted with masculine attributes, I think it as well to anticipate such a proceeding, and therefore suggest that if a new division be found expedient it should bear the appellation of *Virago*†, as a tribute to the virile characteristic of the ladies in question and of the female of this species of Duck.

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November 21, 1871.

Professor Flower, F.R.S., V.P., in the Chair.

Mr. Sclater exhibited and made remarks on a fine skin of *Ateles variegatus*, Wagner (= *A. bartletti*, Gray), which had recently been received by Madame Verdey of Paris in a collection from Oyapok, situated on the river of the same name on the eastern limits of

\* Report of the Smithsonian Institution for 1860, p. 420.

† *Virago* e genere *Anatino* cujus fœmina eadem quæ mas organa vocis habet.

Cayenne. Mr. Sclater remarked that this gave a still wider extent of range to this Spider Monkey than had been indicated by himself and Mr. E. Bartlett in recent remarks upon this species\*.

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A communication was read from Professor Owen, F.R.S., containing the third of a series of memoirs on the osteology of the Marsupials. In this communication Professor Owen entered at full length into the modifications observable in the cranium of the three known species of Wombats (*Phascolomys*).

This paper will be published in the Society's 'Transactions.'

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The following papers were read :—

1. Report on several Collections of Fishes recently obtained for the British Museum. By Dr. ALBERT GÜNTHER, F.R.S., F.Z.S.

[Received October 27, 1871.]

(Plates LIII–LXX.)

In the course of the present year several important collections of Fishes have been obtained by the Trustees of the British Museum :—

1. A collection of 255 examples from the Museum of Hr. Cæsar Godeffroy of Hamburg. The majority of the species represented in this collection were desiderata to the British Museum, whilst the remainder of the specimens had been obtained at localities hitherto ichthyologically unknown, and consequently important for our knowledge of the geographical distribution of the species. Thus we have received the first examples from the Ellice, Cook's, and Pelew Islands, further considerable additions to the fauna of the Tonga and Samoa Islands, and several new species from localities on the north coast of New Holland. This collection contained also several desiderata from the coasts and fresh waters of California, Chile, and the Chincha Islands.

2. Dr. A. Bernhard Meyer, immediately after his safe arrival at Manado, proceeded to despatch some very extensive collections, and sent several thousands of examples of fishes alone. Of these about 200 were selected for the British Museum, which had scarcely any fishes from the Island of Celebes. We might have expected that but few novelties would be contained in a collection made at a place to which Dr. Bleeker's attention had been directed for a number of years, and from which he has enumerated some 760 species. Yet Dr. Meyer's researches have been rewarded by the discovery of a relatively considerable number of interesting forms, among which is a true Gadoid; the occurrence of a representative of this family in the East-Indian archipelago (see p. 669) is a most important fact.

\* See *antea*, pp. 217 et 224.

3. Our collection of fishes of the South-Australian region has been enriched by several presents made by the Trustees of the Museum at Sydney, and by Mr. Morton Allport of Hobart Town. They have yielded fresh evidence with regard to the surprising fact that quite a number of common European marine fishes which hitherto have never been met with between the Tropics reappear in temperate seas of the southern hemisphere (see the remarks on *Clupea sprattus*, p. 672).

Other, smaller acquisitions need not be mentioned specially; and in the following pages I limit myself to diagnoses of those species only which appear to me to be undescribed, and to some remarks on a few known species. The descriptions are given in systematic order; but it may be useful to precede them with a list in which the species are geographically arranged.

## 1. GABOON.

*Hemichromis subocellatus*, p. 666.  
*Nannethiops uniteniatus*, p. 670.  
*Mormyrus lepturus*, p. 670.

## 2. PORT NATAL.

*Halidesmus scapularis*, p. 668.

## 3. CELEBES.

*Anthias rhodopeplus*, p. 654.  
 — *chrysostictus*, p. 655.  
*Plectropoma anthioides*, p. 655.  
*Apogon savayensis*, p. 656.  
*Priacanthus meyeri*, p. 656.  
*Pristipoma manadense*, p. 657.  
*Sebastes rhodochrous*, p. 659.  
*Cubiceps multiradiatus*, p. 661.  
*Peristethus liorhynchus*, p. 663.  
*Pseudophycis peregrinus*, p. 669.  
*Bclonc punctulata*, p. 670.  
*Engraulis baelama* (Forsk.), p. 671.  
*Peciloconger fasciatus*, p. 673.

## 4. JAPANESE SEAS.

*Gobius elapoides*, p. 665.

## 5. FEEJEE, TONGA, AND SAMOA ISLANDS.

*Apogon savayensis*, p. 656.  
*Diagramma obscurum*, p. 657.  
*Holocentrum microstoma* (Gthr.), p. 660.  
 — *diploxiphus*, p. 660.  
*Acanthurus aterrimus*, p. 660.  
*Gobius leucostictus*, p. 664.

*PlatyGLOSSUS nigromaculatus*, p. 666.

— *notopsis*, p. 666.

*Chilinus godeffroyi*, p. 666.

*Anguilla obscura*, p. 673.

*Muraena tænioides*, p. 674.

## 6. COOK'S ISLANDS.

*Ambassis miops*, p. 655.

*Callionymus cookii*, p. 665.

*Myxus leuciscus*, p. 666.

*Hemirhamphus acutus*, p. 671.

## 7. SANDWICH ISLANDS.

*Peristethus engyceros*, p. 663.

## 8. NORTH-EASTERN AUSTRALIA.

*Gobius platystoma*, p. 664.

*Blennodesmus scapularis*, p. 667.

*Tetrodon pleurostictus*, p. 674.

## 9. QUEENSLAND.

*Chiloscyllium modestum*, p. 654.

## 10. SOUTH AUSTRALIA AND TASMANIA.

*Histiopterus labiosus*, p. 658.

*Platycephalus cinereus*, p. 661.

*Gobius mucosus*, p. 663.

*Pataæus subocellatus*, p. 665.

*Clupea sprattus* (L.), p. 672.

*Geotria allporti*, p. 675.

## 11. CHILE.

*Urolophus chilensis*, p. 653.

*Muraena chilensis*, p. 674.

## UROLOPHUS CHILENSIS. (Plate LIII.)

Disk broader than long; snout a little projecting; tail longer than the disk. Disk smooth, but with spines along the median line, viz. three in a single series in the middle of the back, and two on the tail, in front of the serrated spine. No rudimentary dorsal fin.

Upper parts nearly uniform brownish, with a few very indistinct darker specks.

Distance of the extremity of the snout from the vent. . . . .  $4\frac{1}{2}$  inches.  
 Distance of the extremity of the tail from the vent . . . . .  $5\frac{3}{4}$  „  
 Greatest width of the disk . . . . .  $6\frac{1}{2}$  „

One example, from the Godeffroy Museum, is in the collection of the British Museum.

**CHILOSCYLLIUM MODESTUM.** (Plate LIV.)

*The lower labial fold is not continued across the symphysis.* Mouth at the lower surface of the snout, at some distance from its extremity, but nearer to the latter than to the eye. Dorsal fins subequal in size, with the angles not produced, close together, the distance between them being somewhat more than one half of the length of the base of the first. Origin of the first dorsal above the middle of the base of the ventral. Uniform brown, darker on the back than on the sides.

The skin of a single example (female,  $20\frac{1}{2}$  inches long), was obtained with other objects from Queensland.

**SERRANUS HUMERALIS** (C. & V.)

= *Serranus albomaculatus* (Jenyns).

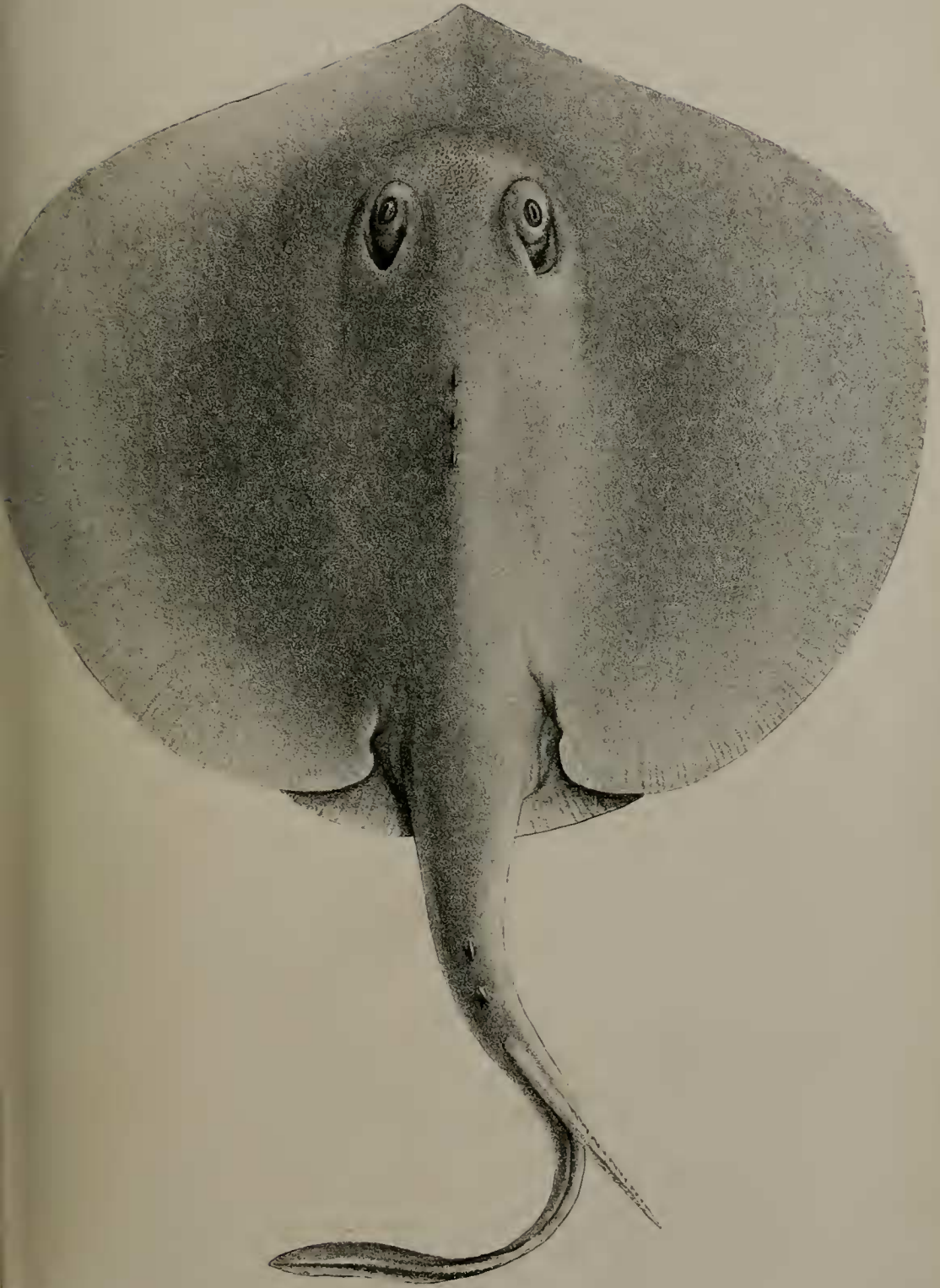
**ANTHIAS RHODOPEPLUS.** (Plate LV.)

D.  $\frac{10}{13}$ . A.  $\frac{3}{7}$ . L. lat. ca. 35.

The height of the body is a little more than the length of the head, and two fifths of the total (without caudal). The width of the interorbital space is less than the diameter of the eye, which is one third of the length of the head, the snout being very short. Angle of the præoperculum with a very prominent flat spine, single or double. The canine teeth of the lower jaw are strongly curved, considerably stronger than those of the upper, and placed more towards the side. The vomerine teeth form a  $\diamond$ -shaped band; the

palatine band broader and rounded in front, tapering behind. Tongue with a large rounded patch of villiform teeth. Scales on the body rather irregularly arranged, those on the head much the smallest. The third dorsal spine, the anterior dorsal rays, the caudal lobes, and the two outer ventral rays produced into filaments. Sides of the fish reddish rose-coloured; an oblique golden-yellow band runs from the præorbital below the eye towards the angle of the præoperculum. The uppermost part of the back and the nape golden yellow. Most of the scales on the side with a pinkish-violet spot on the base; back of the tail pinkish violet. Fins reddish rose-coloured; the dorsal rays with blackish-brown rings; base of the caudal crossed by a blackish-brown band.

One specimen,  $6\frac{1}{2}$  inches long, has been sent by Dr. B. Meyer from Manado.

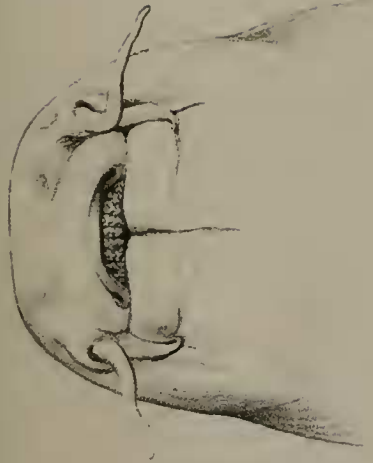


Ed. Ford. A. T. Hollick.

Winters Bros. imp

UROLOPHUS CHILENSIS





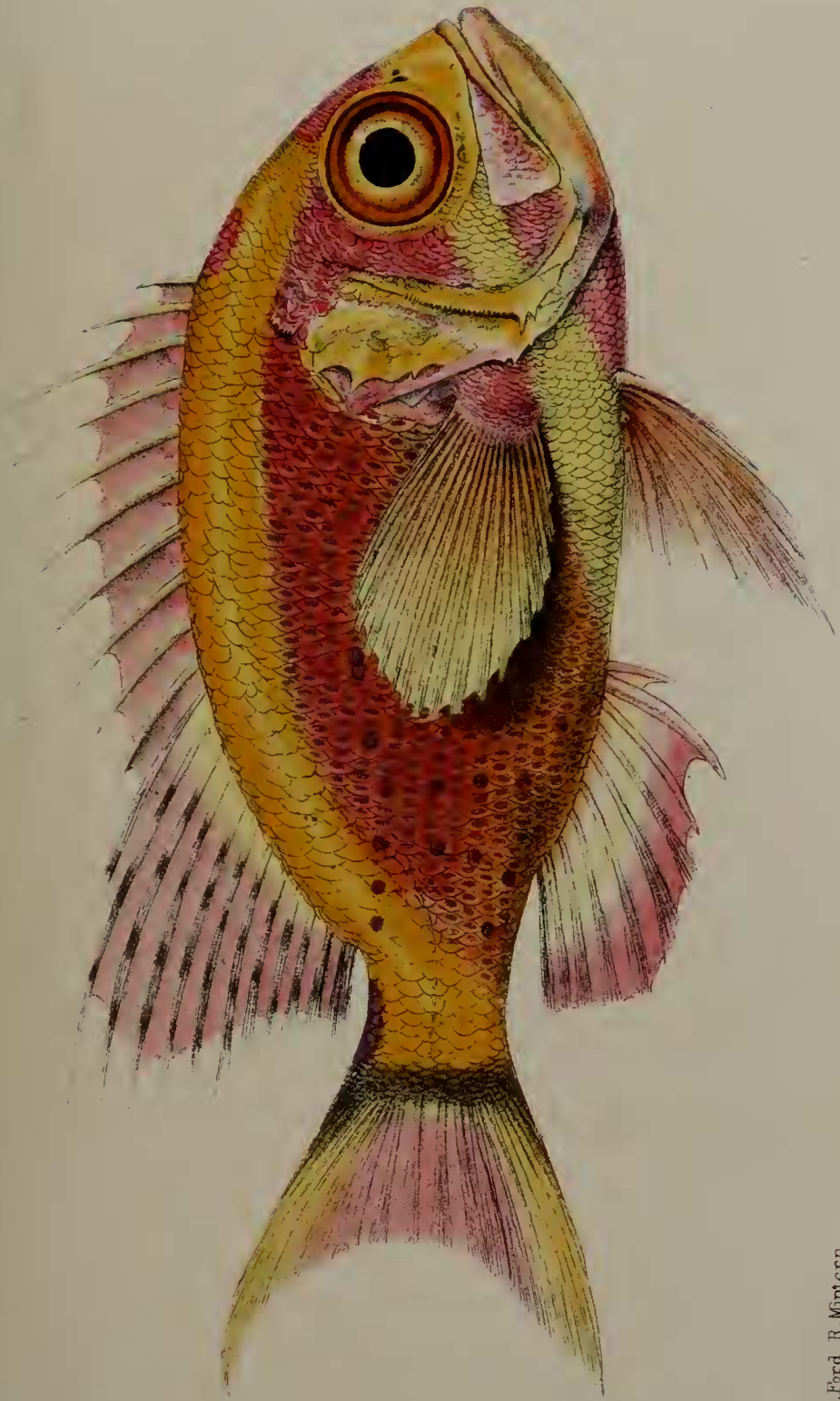
G.H. Ford. C.L. Gruesbach.

Mintern Bros imp

CHILOSCYLLIUM MODESTUM.





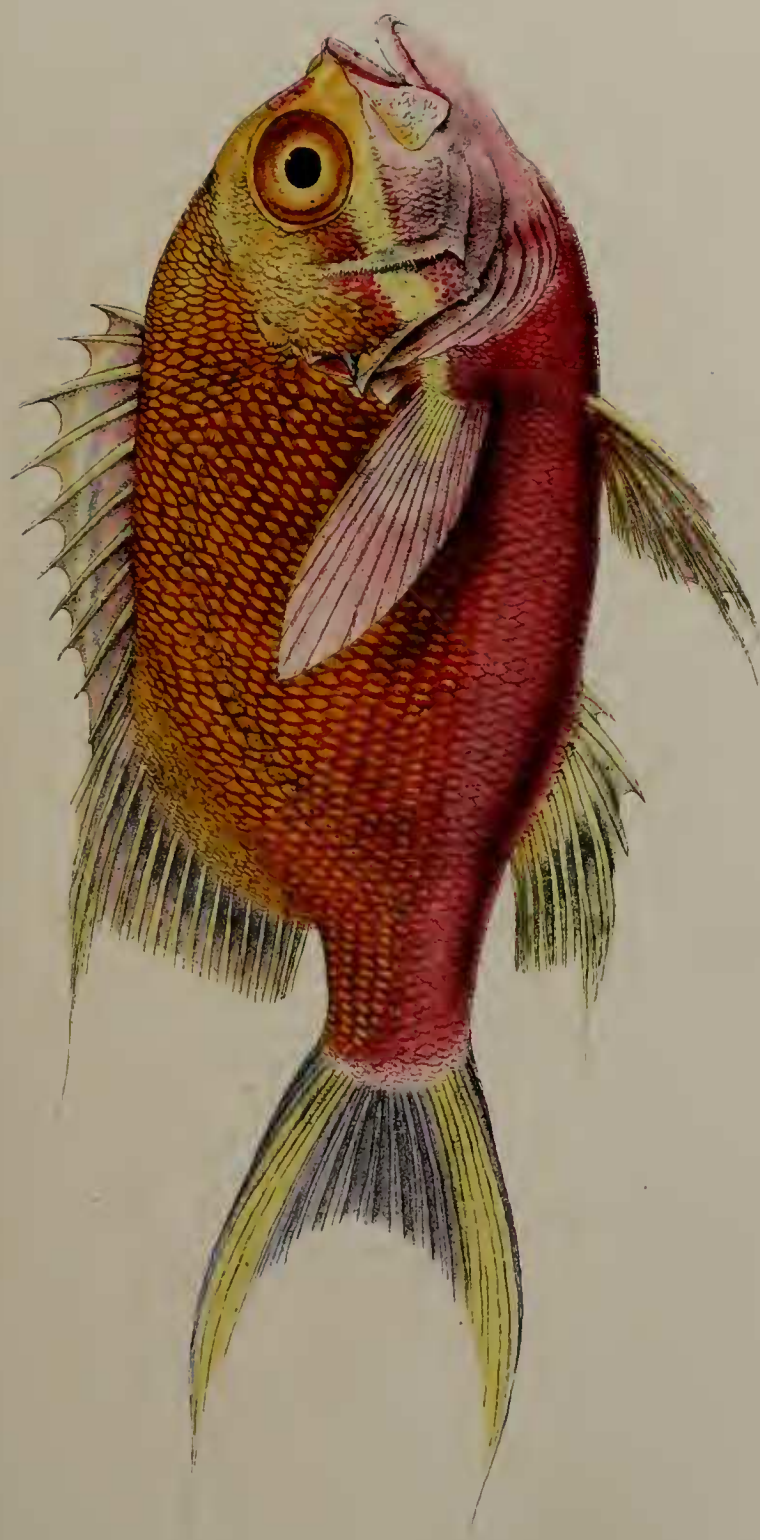


Mintern. Bros Chromo-lith.

ANTHIAS RHODOPEPLUS.

C. H. Ford. R. Mintern.





Mintern Pros. Chromo-lith.

ANTHIAS CHRYSOSTICTUS.

G. H. Ford. E. Mintern.



## ANTHIAS CHRYSOSTICTUS. (Plate LVI.)

D.  $\frac{10}{18}$ . A.  $\frac{3}{7}$ . L. lat. ca. 42.

The height of the body is contained twice and one third in the total length (without caudal), the length of the head thrice. The width of the interorbital space is less than the diameter of the eye, which is one third of the length of the head, the snout being very short. Angle of the præoperculum with a single or double spine. An outer series of stronger teeth in the upper jaw; the lower canines are rather stronger than the upper, and placed more towards the side. The vomerine teeth form a  $\diamond$ -shaped band; the palatine band crescent-shaped, broadest in the middle, separate from the pterygoid band. Tongue nearly entirely covered with teeth. Scales on the body somewhat irregularly placed, those on the head much the smallest. The second and third soft rays of the dorsal, the second of the anal, the caudal lobes, and the two outer ventral rays produced into filaments. Rose-coloured, each scale with a bright yellow centre. Upper parts of the head yellow, with a pink spot between the nostrils; an oblique bright yellow band from the præorbital below the eye to the base of the pectoral fin. The soft dorsal yellow, with oblique violet stripes between the rays; caudal fin yellow, with the upper and lower margins and the central rays pinkish violet.

Two examples,  $4\frac{1}{2}$  and  $6\frac{1}{2}$  inches long, were obtained by Dr. B. Meyer at Manado.

## PLECTROPOMA ANTHIOIDES.

D.  $\frac{10}{17}$ . A.  $\frac{3}{7}$ . L. lat. 35. L. transv.  $\frac{3}{14}$ .

The height of the body equals the length of the head, and is contained twice and three fourths in the total (without caudal). Interorbital space narrow, its width being not quite one half of the diameter of the eye, which is one fourth of the length of the head, and equal to that of the snout. The maxillary extends to below the middle of the eye. Canine teeth moderately strong. Vomerine band of teeth angularly bent, and narrow like the palatine band. Scales on the cheek regularly arranged, in five or six series. The third dorsal spine is the longest, twice as long as the second, and half as long as the head; the second anal spine longer and stronger than the third. Caudal fin rounded. Pectoral extending beyond the commencement of the anal. Red, with some irregular and indistinct blackish spots on the back. A blackish band runs along the median line of the nape.

One specimen, 4 inches long, from Manado, through Dr. B. Meyer.

## AMBASSIS MIOPS.

Closely allied to *A. urotænia*, from which it differs by the smaller size of the eye and the lateral line being continuous. The diameter of the eye in *A. urotænia* is equal to the length of the postorbital part of the head.

D.  $7\frac{1}{9}$ . A.  $\frac{3}{10}$ . L. lat. 29.

The height of the body is contained twice and three fourths in the total length (without caudal), the length of the head thrice. The diameter of the eye is one third of the length of the head, and much less than that of the postorbital portion. Præorbital strongly serrated. Lateral line continuous. The second dorsal spine is rather shorter than the third, and contained four times and one fourth in the total length (without caudal). The third anal spine longer than the second, but considerably shorter than the second of the dorsal. Body with a silvery longitudinal band; the membrane between the second and third dorsal spines and a band along each caudal lobe blackish.

One specimen (no. 256),  $2\frac{3}{4}$  inches long, from the Godeffroy Museum; it is from Rarotonga (Cook's Islands).

This species is undoubtedly distinct from our specimens from Celebes and the Seychelles named *A. urotania*, and easily distinguished by the difference in the size of the eye. But we may hesitate to affirm its distinctness from the specimens from Amboyna and Wahai, described by Bleeker under the same name. He states that the diameter of the eye is *two fifths or one third* of the length of the head (Nat. Tyds. Ned. Ind. 1852, p. 257), an amount of variation as I have never observed it in *Ambassis*.

#### APOGON SAVAYENSIS.

D.  $7\frac{1}{5}$ . A.  $\frac{2}{8}$ . L. lat. 26.

The height of the body is nearly equal to the length of the head, and two fifths of the total (without caudal). The width of the interorbital space is two thirds of the diameter of the eye, which is two fifths of the length of the head, and equal to that of the postorbital portion. Only the posterior edge of the præoperculum is finely denticulated. Dorsal spines feeble: the first minute, the third the longest and as long as the eye. Caudal fin subtruncated. Ventral fins extending to the vent. Bronze-coloured; an oblique blackish band from the eye to the angle of the præoperculum. A blackish cross band on the back of the tail, about three scales broad, and not extending downwards beyond the lateral line.

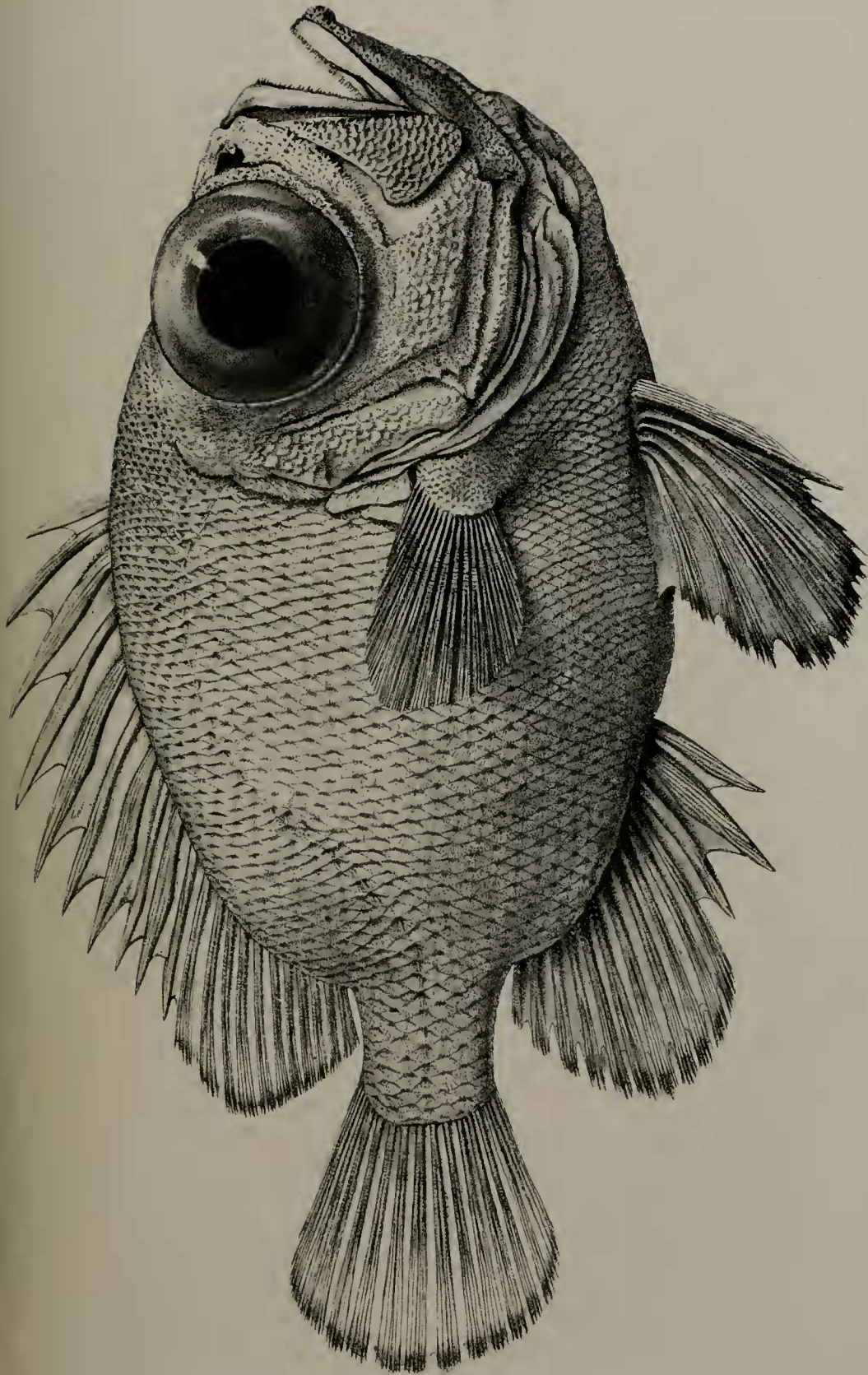
One specimen (no. 78) from Savay (Samoa Islands),  $2\frac{1}{2}$  inches long, has been obtained from the Godeffroy Museum. Two other examples,  $3\frac{1}{2}$  inches long, have been sent from Manado by Dr. Meyer.

This species appears to be closely allied to *A. bandanensis* (Blkr.); but our specimens have no bands on the body, and Bleeker does not mention the oblique band on the cheek, which, however, is more distinct in the specimen from Savay than in those from Celebes.

#### PRIACANTHUS MEYERI. (Plate LVII.)

D.  $\frac{10}{12}$ . A.  $\frac{3}{11}$ . L. lat. 48.

The height of the body is more than one half of the total length (without caudal), the length of the head three sevenths. *Eye enormously large, one half of the length of the head.* The posterior



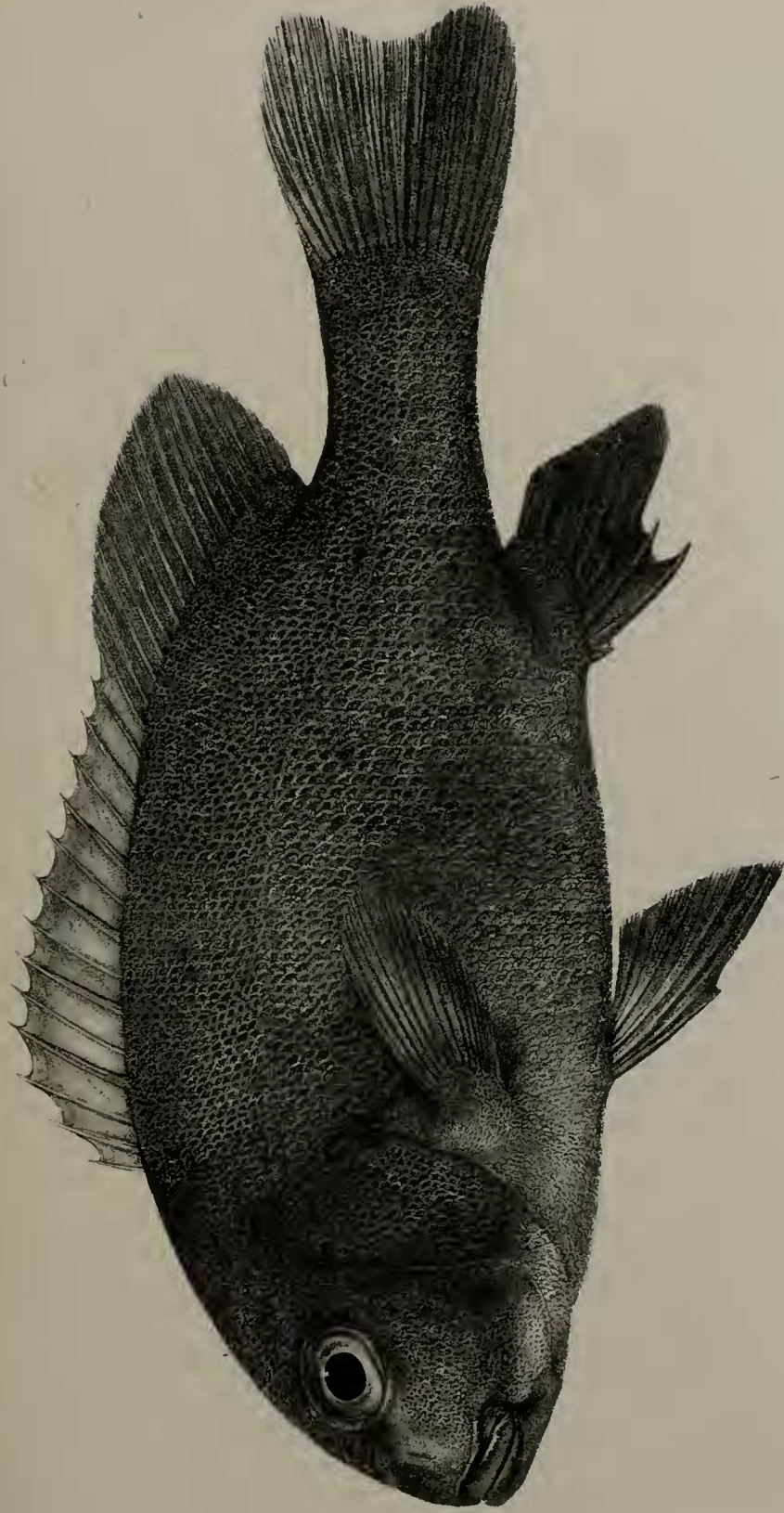
Minton & Buss zue.

PRJACANTHUS MEYERI

GH.Ford. CL. Griesbach







GHELD. C. J. Ornesbach.

DIAGRAMMA OBSCURUM

Museum. Prinsii



nasal opening is wide, crescent-shaped, with the convexity turned forwards, situated on the upper side of the head. Spine at the angle of the præoperculum very indistinct; limbs of the præoperculum subequal in length. Caudal fin rounded. Spines of the fins very strong, deeply striated, without roughnesses; the second and last dorsal spines subequal in length, but much shorter than the fourth and fifth, which are the longest. The ventral fins reach to the anal fin. Uniform reddish rose-coloured. Vertical and ventral fins with a black margin.

One example,  $10\frac{1}{2}$  inches long, has been sent from Manado by Dr. B. Meyer.

PRISTIPOMA MANADENSE.

D.  $\frac{11}{15}$ . A.  $\frac{3}{7}$ . L. lat. 50. L. transv. 6/13.

The height of the body is contained twice and two thirds in the total length (without caudal), the length of the head twice and one fifth. The diameter of the eye is one fifth of the length of the head, or two thirds of that of the snout. Upper jaw scarcely longer than lower; *maxillary not extending to the front margin of the orbit*. The posterior limb of the præoperculum emarginate, with the angle rounded, denticulated, but not produced. Spines of the fins very strong; the two anterior of the dorsal very short, *the second not half as long as the third, which is the longest*, and nearly half as long as the head. The other spines become gradually shorter, the last being only half as long as the first ray. The second anal spine is much stronger and longer than the third, and nearly as long as the third dorsal spine. Caudal fin truncated. Pectoral pointed, extending to the vent. Silvery; upper half of the body with small blackish spots, which occupy the base of the scales. Dorsal fin with two rather irregular series of round blackish spots, each of the size of the pupil. The other fins immaculate, or with a slight blackish tinge.

One specimen, 13 inches long, has been obtained at Manado by Dr. B. Meyer.

DIAGRAMMA OBSCURUM. (Plate LVIII.)

D.  $\frac{13}{17}$ . A.  $\frac{3}{7}$ . L. lat. 75. L. transv. 13/24.

The height of the body is contained twice and three fourths in the total length (without caudal), the length of the head thrice and a half. The diameter of the eye equals the extent of the snout, and is contained thrice and two thirds in the length of the head. The maxillary extends to the front margin of the eye. The third to seventh dorsal spines are equal in length, one third of the length of the head, and not much longer than the following. All are of moderate strength. The length of the longest dorsal rays is less than one half of the depth of the body. Caudal fin emarginate, with the lobes rounded. The second and third anal spines subequal in length, and much stronger than those of the dorsal. The pectoral is rather shorter than the ventral, which does not quite

extend to the vent. The least depth of the free portion of the tail is considerably less than its length. Body uniform brownish black, the scales of the lower part of the body lighter in the centre. Fins black; the lower half of the caudal of a deeper shade than the upper.

Feejee Islands. One specimen (no. 280),  $8\frac{1}{2}$  inches long, from the Godeffroy Museum.

**DENTEX RIVULATUS** (Rüpp.).

*Gymnocranius rivulatus*, Klz.

This species is found at the Seychelle Islands; it is the "*Sphærodon grandoculus*" of Col. Playfair's List of Seychelle Fishes.

**HISTIOPTERUS LABIOSUS.** (Plate LIX.)

B. 6. D.  $\frac{7}{17}$ . A.  $\frac{2}{11}$ .

The height of the body is somewhat less than the length of the head, and one third of the total (without caudal). Upper profile of the head concave; snout much produced, the eye being entirely situated in the posterior half of the length of the head. Mouth of moderate width, the angle of the mouth being much nearer to the vertical from the eye than to the end of the snout. Lower jaw slightly the longer; lips and chin densely covered with short papillæ. The teeth are in bands *en cardes*, and most of those of the sides are very obtuse, molar-like. The scales on the cheeks hidden below the skin. Præoperculum with the hind margin concave, and with the angle projecting; the angle and lower margin are indistinctly denticulated. Opercles scaleless. Scales very small. Dorsal spines strong, the fourth being the longest; the seventh not much shorter than the first ray. Caudal fin emarginate, with the angles pointed. Pectoral, two thirds as long as the head, with the upper rays longest. Brown, with indistinct blackish longitudinal markings.

One specimen, 22 inches long, from South Australia.

**CHÆTODON MILIARIS** (Quoy & Gaim.).

D.  $\frac{13}{22}$ . A.  $\frac{3}{19}$ . L. lat. ca. 39.

The depth of the scaly part of the body is two thirds of the total length (without caudal). Snout somewhat pointed, short, rather shorter than the eye. The soft dorsal and anal fins obtusely rounded. Body of a nearly uniform olive-colour (in spirits), the scaly sheath of the dorsal fin yellow; each scale with an indistinct violet spot at the base. The ocular band commences in front of the first dorsal spine, is narrower than the orbit, and edged with yellow. It is still narrower below the orbit and also paler, but extends over the interoperculum. Caudal fin without any markings. The soft dorsal and anal with a narrow black and white margin, and slightly powdered with black within the margin. The smaller specimen appears to have had a round blackish spot between the seventh and thirteenth dorsal rays close to the margin of the fin.



CHITARD, CL. CRIESBACH.

Mintern Bros imp

HISTIOPTERUS LABIOSUS.



Two specimens were sent by Dr. A. B. Meyer from Manado ; the larger is 5, and the smaller 4 inches long.

SEBASTES RHODOCHROUS.

D. 11  $\frac{1}{9}$ . A.  $\frac{3}{5}$ . L. lat. ca. 48.

The height of the body is one third of the total length (without caudal), the length of the head one half. Interorbital space deeply concave, very narrow, its width being only one third of the diameter of the eye. Snout longer than the eye, which is one fourth of the length of the head. Spines of the head prominent and acute. Supraorbital margin with one spine in front and two behind. No groove on the occiput. Infraorbital with a single ridge armed with four spines. Occiput naked ; opercles and cheeks scaly. The palatine teeth form a narrow band. Dorsal spines strong, the third, fourth, and fifth are the longest, but only a little longer than the eye ; the eleventh considerably shorter than the twelfth. The second anal spine is stronger and longer than the third, and one third of the length of the head. The pectoral fin extends to the anal. Caudal fin truncated. Red, the upper parts of the fish irregularly marbled with blackish. A large black spot between the seventh and tenth dorsal spines on the base. All the other fins nearly uniform red. Pharynx with scarcely any blackish spots.

Two specimens were obtained by Dr. A. B. Meyer at Manado ; the larger is 8 inches long.

AGRIOPUS TORVUS (Gronow).

This fish is figured in 'Arcana, or the Museum of Natural History,' under the name of *Congiopodus percatius*. As this work appears to have been issued in or about the year 1811, it is a question whether the generic name of *Congiopodus* should not have priority before *Agriopus*, Cuvier, 1829. After some consideration I came to the conclusion that the generally adopted nomenclature should not be disturbed in this case, for the following reasons :—

1. The 'Arcana' shows on every page evidence of its unscientific character ; it was a production of a very inferior kind even for the early period in which it made its appearance. The way in which it was published appears to have been very irregular ; no name of a responsible editor or author appears on the titlepage ; "Editors" are mentioned in the introduction, and the dedicatory notice is signed "G. Perry," who, I believe, was an artist, but not a naturalist. Thus we are left in ignorance as regards the authorship of the new names employed in the book.

2. Although the figure of "*Congiopodus percatius*" is recognizable, no proper characters of the genus are given ; after having made a few insignificant remarks about the fish, the author of the article runs off into considerations of the organization of fishes generally.

3. It will be difficult to discover the etymology of the term "*Congiopodus*." Even if intended for "*Conchopodus*," or "*Coniopodus*," the term is without any meaning when applied to *Agriopus*,

and therefore, in my opinion, ought to be sunk into the synonymy or, better, forgotten.

*HOLOCENTRUM MICROSTOMA*, Günth. Fish. i. p. 34.

There are several examples in the Godeffroy collection from the Samoa and Tonga Islands. The spot in front of the spinous dorsal is larger than in the typical specimens, where it has partly disappeared from the long period during which they have been preserved in spirits. The spot is in the form of an oblique black band. I think that *H. tahiticum*, Kner (Novara, Fisch. p. 9), is not specifically distinct from this species. (The figure given by Kner represents *H. sammara*.)

*HOLOCENTRUM DIPLOXIPHUS*. (Plate LX.)

D. 11/13. A. 4/9. L. lat. 45-49. L. transv.  $3\frac{1}{2}/8$ .

The height of the body is equal to the length of the head, and one third of the total (without caudal). The interspace between the eyes is flattish, its width being somewhat less than the diameter of the eye, and two sevenths of the length of the head. The length of the groove for the processes of the intermaxillaries is two thirds of the diameter of the eye. Length of the snout about three-fifths of the diameter of the eye; the maxillary does not extend to below the middle of the orbit. *Suprascapula serrated*. Operculum with two prominent flat spines subequal in size. *The præopercular spine is broad, flat, dagger-shaped, projecting far beyond the margin of the gill-opening, its length being two thirds of the diameter of the eye. Dorsal fin elevated*; the third, fourth, fifth, and sixth spines are the longest, half as high as the body. Third anal spine very strong, two thirds of the length of the head, or two ninths of the total length (without caudal). Caudal moderately forked, with the lobes rounded. Ventral fins terminating at a great distance from the vent. In the *adult* the upper parts and sides are of a rose-colour, which gradually passes into the silvery coloration of the lower parts; some parts of the back are minutely and indistinctly punctulated with brown. Vertical fins with a reddish tinge; the spinous dorsal with a broad yellowish margin; and a series of very indistinct rounded darker spots along its upper half. In a half-grown example the head and body are densely punctulated with brown; the upper parts being of a greyish green, with two large whitish blotches. The anterior blotch occupies the space below the second half of the spinous dorsal, the posterior is below the end of the soft dorsal. The spinous dorsal fin with a curved series of large roundish blackish spots, the upper part of the fin being of a yellowish colour.

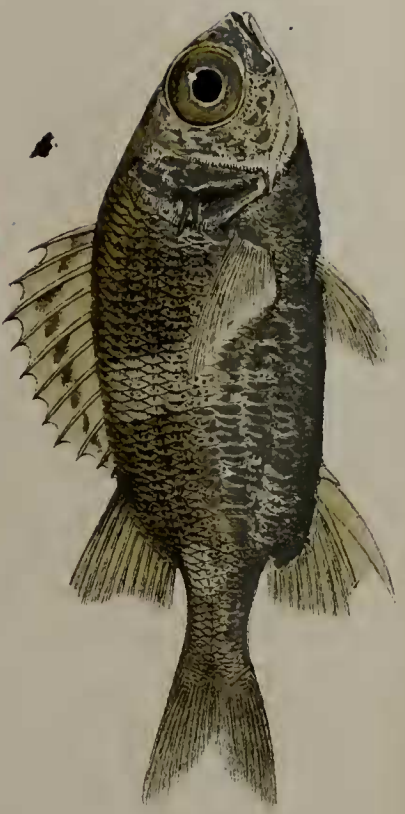
Two specimens from the Godeffroy collection; the larger is  $5\frac{1}{2}$  inches long, the smaller  $3\frac{1}{2}$  inches. Samoa Islands.

*ACANTHURUS ATERRIMUS*.

D.  $\frac{9}{31}$ . A.  $\frac{3}{28}$ .

The height of the body is contained once and two thirds in the



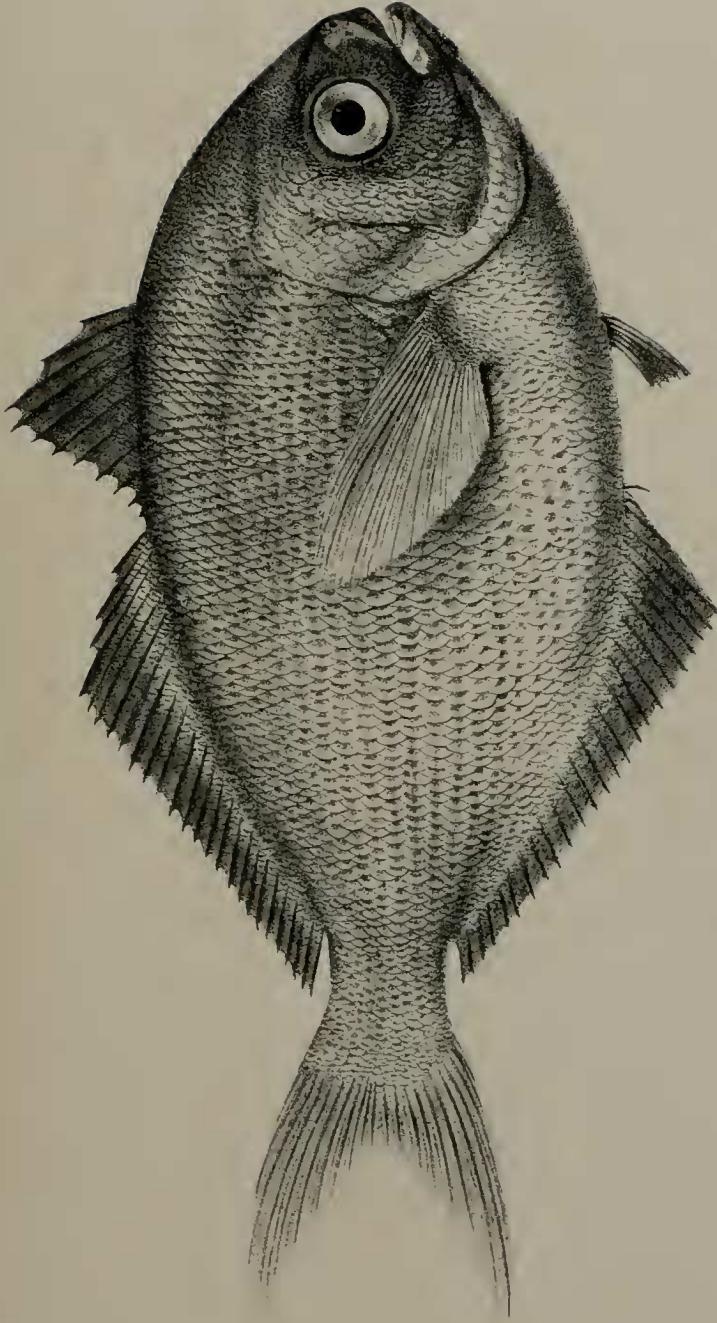


Holocentrum diploxiphus. Adult and young.

Ch. Ford & R. M. M. M. M.

Muntern Bros. chromo-lith.





G. H. Ford. C. I., Griesbach

CUBICEPS MULTIRADIATUS.

Monterey Heros. 1870



total length (without caudal). Eight lobate incisors in the upper jaw, and ten in the lower. Anterior profile of the snout slightly concave. The distance of the nostril from the edge of the upper jaw is two thirds of the length of the head. Dorsal and anal fins rounded behind; caudal deeply forked, with the lobes pointed. Deep black; a ring round the lower jaw, the opercular membrane and the outer ventral ray bluish. Hind margin of the caudal with a lighter-coloured crescent.

One specimen,  $3\frac{1}{2}$  inches long (no. 56), from the Godeffroy Museum; it was obtained at Savay (Samoa Islands).

*CUBICEPS MULTIRADIATUS.* (Plate LXI.)

D.  $10\frac{1}{25}$ . A.  $\frac{3}{25}$ . L. lat. 60. L. transv. 8/22.

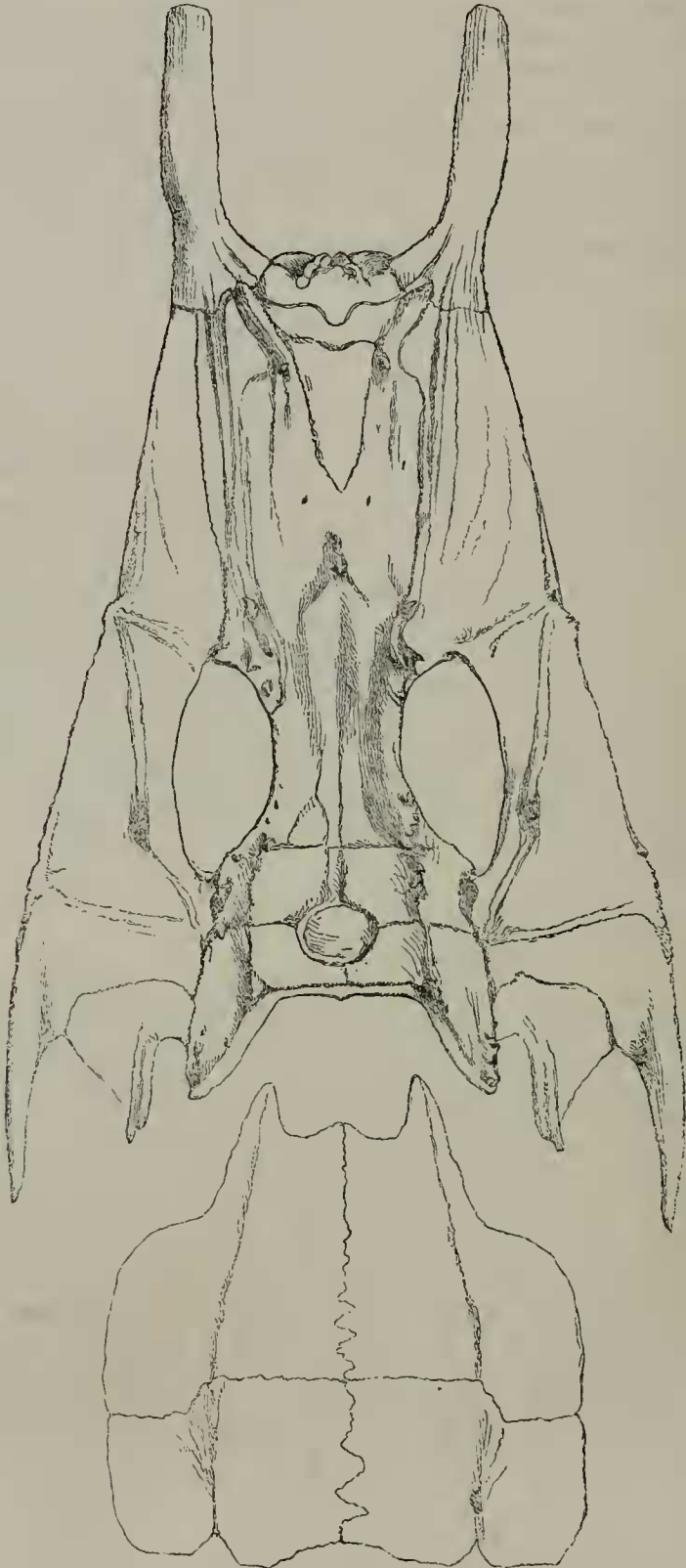
The height of the body is contained twice and one fifth in the total length (without caudal), the length of the head thrice and a half. Abdomen not compressed into a ridge; ventral fins received in a groove. The eye occupies nearly the middle of the depth of the head; its diameter equals the length of the snout, and is one fourth of that of the head. Jaws with a series of very small teeth. The vomer and tongue are armed with a narrow band of minute teeth; no palatine teeth. Maxillary hidden below the præorbital, and extending to the front margin of the orbit. Pectoral fin rather longer than the head, and extending considerably beyond the origin of the anal. Ventral fin two fifths as long as the pectoral. Caudal fin deeply forked. Light brownish, with a silvery tinge; a blackish stripe along each series of scales. Fins black, except the pectoral; inside of the mouth and gill-cavity flesh-coloured.

One specimen, 6 inches long, has been sent from Manado by Dr. A. B. Meyer.

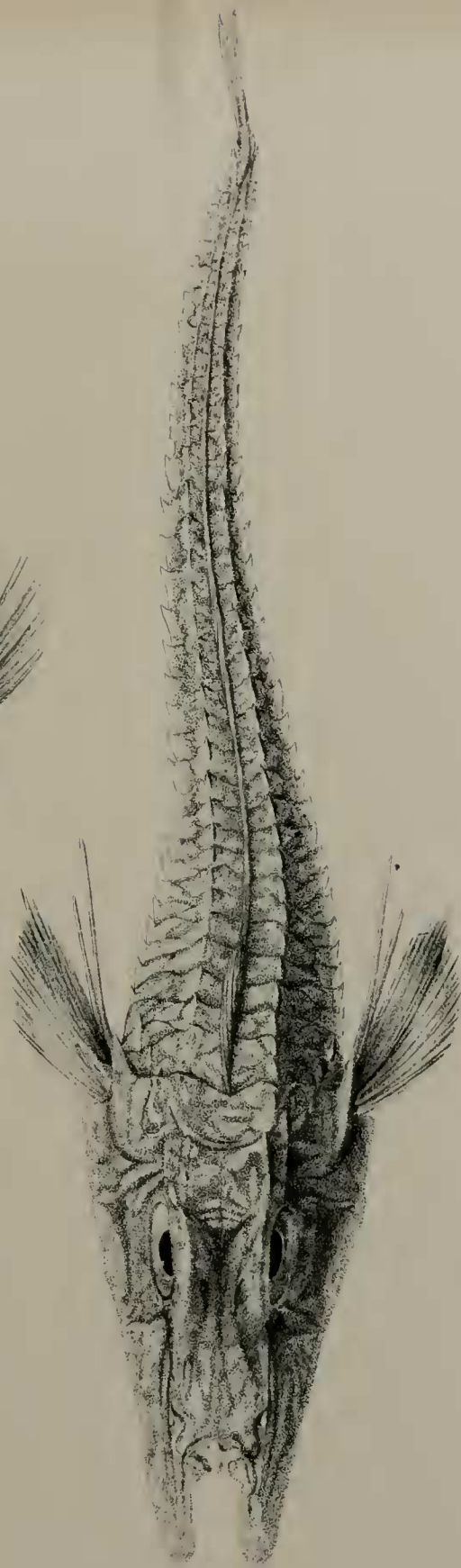
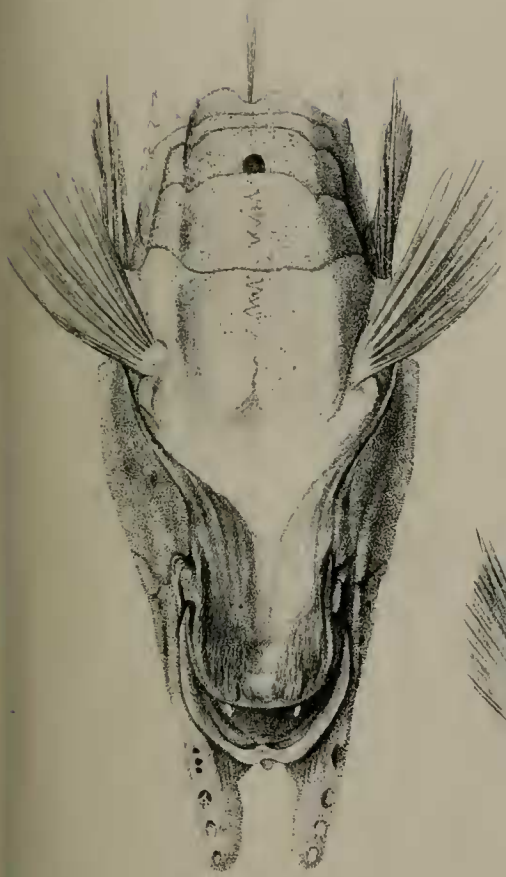
*PLATYCEPHALUS CINEREUS.*

D. 17|12. A. 12. L. lat. 120.

The length of the head is two sevenths of the total (without caudal), its width between the præopercular spines is contained once and three fourths in its length. Upper surface of the head smooth, without spines, except a minute one in front of the eye. Præopercular spines short, subequal in length, or the lower somewhat the longer. The teeth of the maxillary are villiform, forming a broadish band with two pairs of distinct canine teeth behind on the side of the symphysis. The mandibular and palatine bands are much narrower, with a series of longer conical teeth. Vomerine band continuous, crescent-shaped, narrowest in the middle, broadest towards each extremity, where also some larger conical teeth are mixed with the villiform teeth. Interorbital space but slightly concave, scaly, its width being equal to the diameter of the eye, which is contained twice and one third in the length of the snout. Eye without tentacle. The isolated dorsal spine short and stiff. Upper parts nearly uniform blackish ash; dorsal fins without spots, transparent; caudal



*Peristethus engyceros* (p. 663).



C.H. Ford . C.L. Cruesbach

PERISTETHUS LIORHYNCHUS.

Mintern Bros imp.





mottled with black, without bands; pectoral and ventral fins brown, with whitish reticulations.

Length of a single specimen  $14\frac{1}{2}$  inches. South Australia.

**DACTYLOPTERUS ORIENTALIS.**

Young examples have been described by Dr. Bleeker under the name of *D. chirophthalmus* (Nat. Tyds. Ned. Ind. vii. 1854, p. 494).

**PERISTETHUS LIORHYNCHUS.** (Plate LXII.)

D. 7  $\frac{1}{13}$ . A. 21. L. lat. 34.

Præorbital processes of moderate width, their length being one third of the distance between their extremity and the front margin of the orbit. Snout and forehead without any spines; also the præopercular ridge does not terminate in a spine. Interorbital space concave, its width being equal to the diameter of the eye. Anterior abdominal scutes considerably longer than broad, and much larger than the posterior, which are broader than long. Red, coarsely reticulated with blackish. The dorsal, anal, and pectoral fins with a black margin.

One specimen,  $8\frac{1}{3}$  inches long, was obtained by Dr. A. B. Meyer at Manado.

**PERISTETHUS ENGYCEROS.** (See woodcut, p. 662.)

Præorbital processes *narrow*; their length is contained twice and three fourths in the distance of their extremity from the orbit. Snout with three spines above; four or five similar spines in front of the upper part of the orbit. Præopercular spine nearly as long as præorbital process, subcylindrical, acutely pointed. Interorbital space concave, its width less than the vertical diameter of the orbit. There are also some small spines on each side of the crown of the head. Anterior ventral plates rather longer than broad, posterior nearly twice as broad as long.

I have seen only the fragments of a dried example of this new species; it was sent by Harper Pease, Esq., from the Sandwich Islands.

**GOBIOUS MUCOSUS.** (Plate LXIII. fig. A.)

D. 6  $\frac{1}{11}$ . A. 10.

The scales are very small and hidden below a thick mucous covering, which envelops all parts and forms on the snout and sides of the head transverse and longitudinal ridges. The height of the body is one fifth of the total length (without caudal), the length of the head two sevenths. Head rather depressed, its depth being one half of its length. Snout moderately produced, the posterior margin of the orbit occupying nearly the middle of the head. The diameter of the eye equals the width of the interorbital space, and is one fifth of the length of the head. Mouth small, subvertical, the angle of the mouth being at a considerable distance from the eye. Teeth

very small, in bands, without canines. Dorsal and anal fins not elevated. Caudal pointed, longer than the head. The pectoral extends to the origin of the soft dorsal, the ventral terminates at some distance from the vent. The body appears to have been subreticulated with blackish. Rays of all the fins, except the ventrals, with blackish spots.

One specimen,  $3\frac{1}{3}$  inches long (no. 413), from the Godeffroy Museum; it was obtained at Adelaide.

**GObIUS PLATYSTOMA.** (Plate LXIII. fig. B.)

D. 6|10. A. 9. L. lat. 60.

Allied to *Gobius platynotus*, but with a very broad and angular snout. Twenty longitudinal series of scales between the origin of the posterior dorsal fin and the anal. Head and anterior part of the body broad and rather depressed. The broad rounded snout projects somewhat over the large mouth. The height of the body is one fifth of the total length (without caudal), the length of the head nearly one fourth. Eye small, only half the width of the interorbital space. The maxillary extends to below the hind margin of the orbit. Canine teeth none. Head entirely naked. Dorsal and anal fins low; caudal obtusely rounded. Ventral short, not adherent to the belly, terminating at a great distance from the vent; its basal membrane is well developed. The free portion of the tail is scarcely longer than deep. Brownish, with some indistinct darker spots. The spinous dorsal with a black spot behind.

One specimen, 2 inches long (no. 289), from the Godeffroy Museum. It was obtained at Port Mackay, North-eastern Australia.

**GObIUS LEUCOSTICTUS.** (Plate LXIII. fig. C.)

D. 6|12. A. 11.

Scales minute. The height of the body is one sixth of the total length (without caudal), the length of the head one fourth. Head rather compressed; eyes very close together, obliquely directed upwards, of moderate size, their diameter being one fifth of the length of the head. Snout very short, obtuse; mouth oblique, extending to below the middle of the eye; jaws even in front. Head and foremost part of the trunk scaleless. Dorsal and anal fins lower than the body; caudal somewhat pointed, longer than the head. The ventral fin terminates at a great distance from the vent, the pectoral extends to the end of the spinous dorsal. Greyish, with irregular dark cross bars on the back; sides and lower parts covered with small round whitish spots and dots. The spines and rays of the dorsal with black spots arranged in oblique series; on the anal the black spots are confluent across the interradiation membrane, forming oblique bands; caudal with six black cross bands. Ventral with black and white spots.

One specimen,  $2\frac{2}{3}$  inches long (no. 429), from the Godeffroy Museum. Tonga Islands.



B



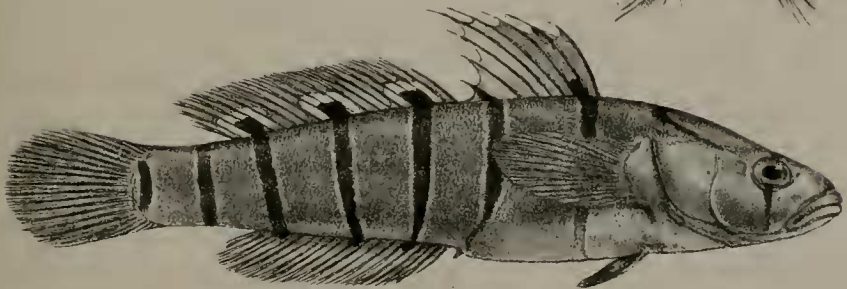
C



A



D





## GOBIUS ELAPOIDES. (Plate LXIII. fig. D.)

D. 8|21. A. 20. L. lat. 110.

Body compressed, its depth being contained four times and two thirds in the total length (without caudal), the length of the head thrice and three fourths. Head naked, the scales from the nape advancing only as far as the eye. Snout longer than the eye, which is obliquely directed upwards, and nearly one fifth of the length of the head. Jaws even in front; the maxillary extends to below the anterior margin of the orbit. Teeth moderately strong, not quite equal in size, but none of them can be called canines. The middle dorsal spines are produced; caudal fin rounded, shorter than the head. Body with seven narrow dark-brown rings edged with white. The first and second correspond to the commencement and end of the spinous dorsal; the three following to the second dorsal fin, on the base of which they form three ocelli; the sixth round the caudal peduncle, and the seventh on the base of the caudal fin. A similar ring crosses the orbits and cheek. A straight brown stripe ascends from the eye to a spot on the nape of the neck.

One specimen,  $3\frac{1}{2}$  inches long, has been obtained by A. Adams, Esq. As it was in a bottle containing reptiles and fishes from the Japanese region, it is probable that this Goby inhabits some part of those coasts.

## CALLIONYMUS COOKII.

D. 4|8. A. 7.

Gill-opening a small foramen on the side of the neck; extremity of the operculum produced backwards. The præopercular spine is straight, slender, considerably longer than the eye, with six or seven small barbs curved upwards and inwards; no barb at the base of the spine. Head much depressed, its length being contained thrice and two thirds in the total (without caudal). A longitudinal fold of the skin along each lower side of the abdomen and tail. *Male*:—The first dorsal spine and the last ray of the soft dorsal and anal produced. Upper parts of the body with dark transverse bands and markings, the lower with small blue ocelli. The soft dorsal with oblique dark bands and blue ocelli; anal with longitudinal series of blue ocelli in its basal half, and with a black spot between the ends of the sixth and seventh rays; this black spot is again ornamented with blue ocelli. Caudal fin with dark cross bands, its lower half ocellated with blue.

One specimen,  $3\frac{1}{4}$  inches long (no. 260), from the Godeffroy Museum; it was obtained at Rarotonga, Cook's Islands.

## PATÆCUS SUBOCELLATUS. (Plate LXIV.)

D. 39. A. 15. C. 10. P. 8.

The first dorsal spine very short, the second is the longest, as long as the head. The interradial membrane of the anal fin is so narrow that the fin cannot be erected; and the last ray is attached to the lower edge of the tail. The three upper pectoral rays much shorter

than the fourth. No orbital rim. Skin entirely smooth, without tubercles or tentacles. Four ocellated spots, about as large as the eye, and the anterior equidistant from each other, along the upper half of the body. Fins indistinctly reticulated with brown, some of the reticulations being distinct rings.

South Australia.

*MYXUS LEUCISCUS.* (Plate LXV. fig. A.)

D.  $4\frac{1}{8}$ . A.  $\frac{3}{10}$ . L. lat. 47. L. transv. 14.

Teeth small, movable, bent, those of the upper jaw in a single series; a deep notch in the middle of the upper jaw to receive the mandibulary symphysis. Lower jaw with a similar series of horizontal teeth; other smaller teeth appear to be destined to replace those in function. Lower surface of the mandible without transverse folds. Palate apparently toothless. The maxillary does not quite extend to the front margin of the eye. Snout pointed and rather longer than the eye, which is one fourth of the length of the head, and only two thirds of the width of the interorbital space. The depth of the body is scarcely more than the length of the head, which is one fourth of the total length (without caudal). Pectoral extending to the commencement of the spinous dorsal, which corresponds to the fifteenth scale of the lateral line. Dorsal spines rather feeble, the first, which is the longest, being not quite half as long as the head. Caudal fin emarginate. Coloration uniform, back greenish.

One specimen,  $5\frac{1}{2}$  inches long (no. 273), from the Godeffroy Museum; it was obtained at Rarotonga, Cook's Islands.

*CHILINUS GODEFFROYI.* (Plate LXVI.)

D.  $\frac{9}{10}$ . A.  $\frac{3}{8}$ . L. lat. 21.

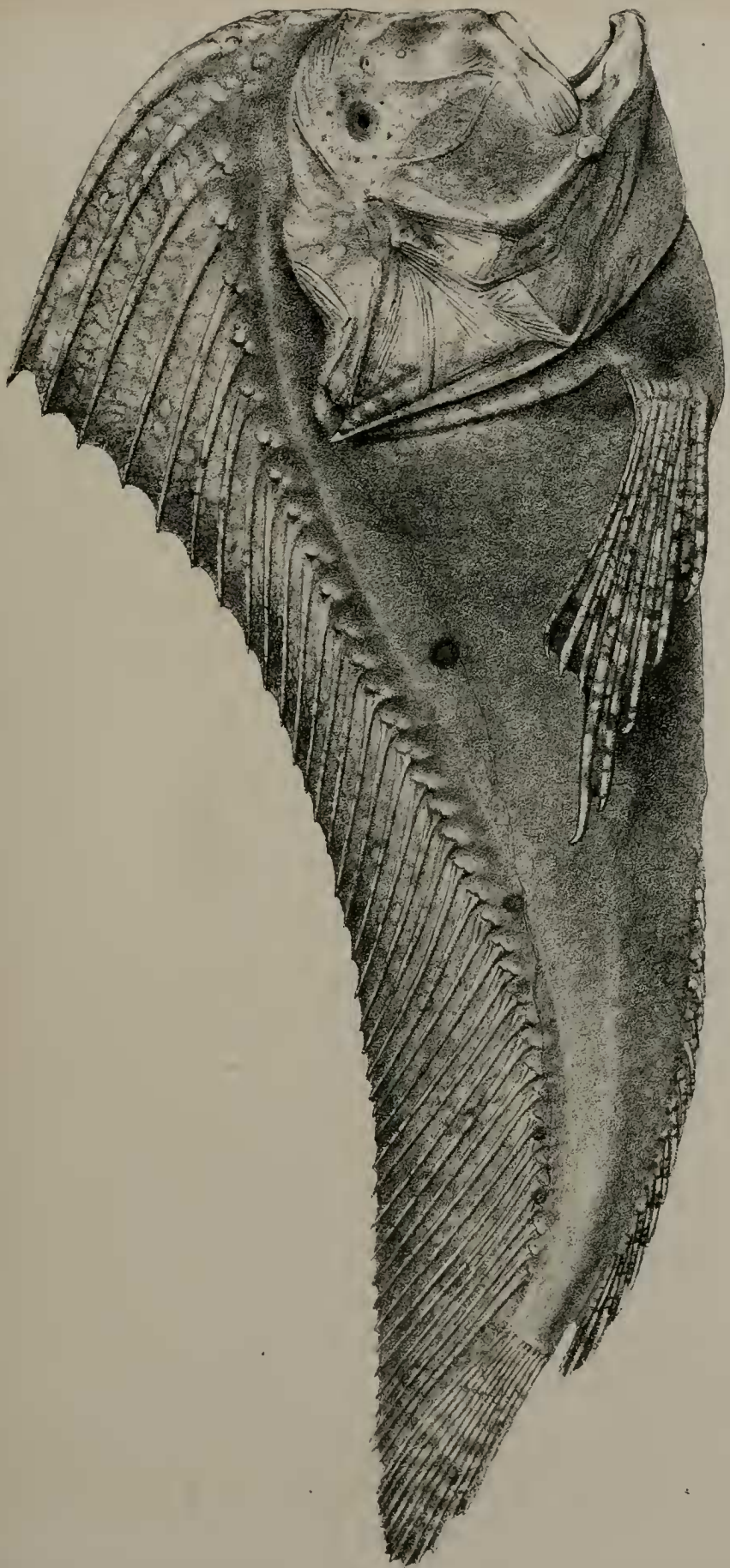
The height of the body is nearly equal to the length of the head, and two fifths of the total (without caudal). Head longer than high; snout compressed, rather pointed, its length being two fifths of that of the head. Chin not prominent. Scales on the cheek in two series, the lower of which is composed of three or four scales, and does not extend on to the præopercular limb. Caudal fin rounded. Tubules of the lateral line simple. Most of the scales with a well-defined deep-brown vertical streak; two parallel brown lines across the præorbital, two other similar lines behind, and one above, the eye. Vertical fins with brown reticulations; a white spot on the base of the last dorsal and anal rays.

One specimen,  $5\frac{1}{2}$  inches long (no. 440), from the Godeffroy Museum; it is from the Tonga Islands.

*PLATYGLOSSUS NIGROMACULATUS.* (Plate LXV. fig. B.)

D.  $\frac{9}{11}$ . A.  $\frac{3}{11}$ . L. lat. 28.

The height of the body is one third of the total length (without caudal), and a little more than the length of the head. Snout pointed, somewhat longer than the eye, which is two ninths of the



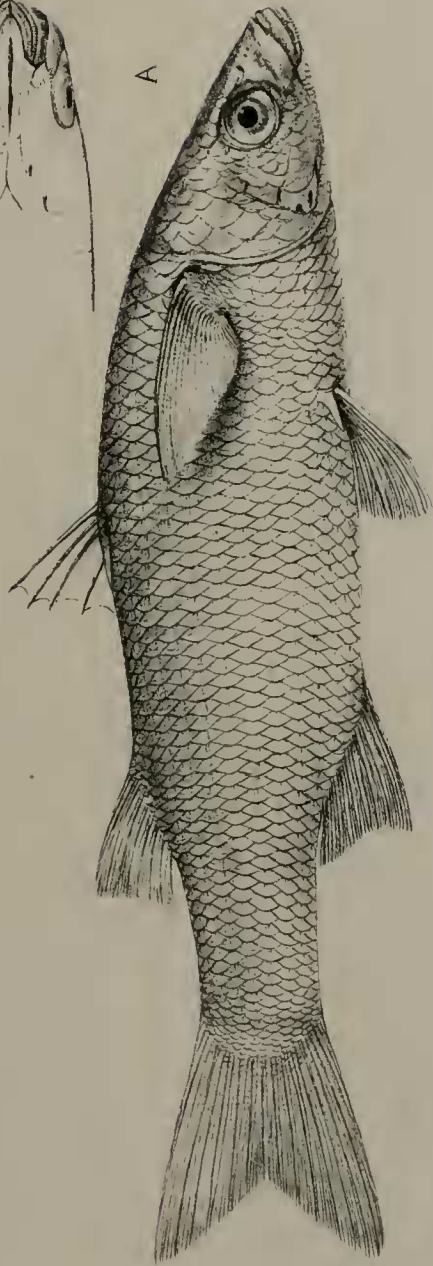
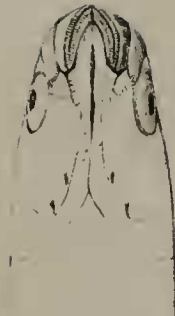
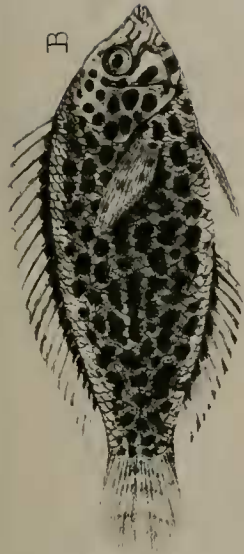
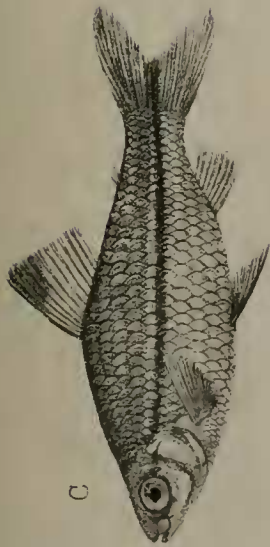
Mintern Bros. imp.

PATACUS SUBOCELLATUS.

GHEBrd. A. T. Holliek.



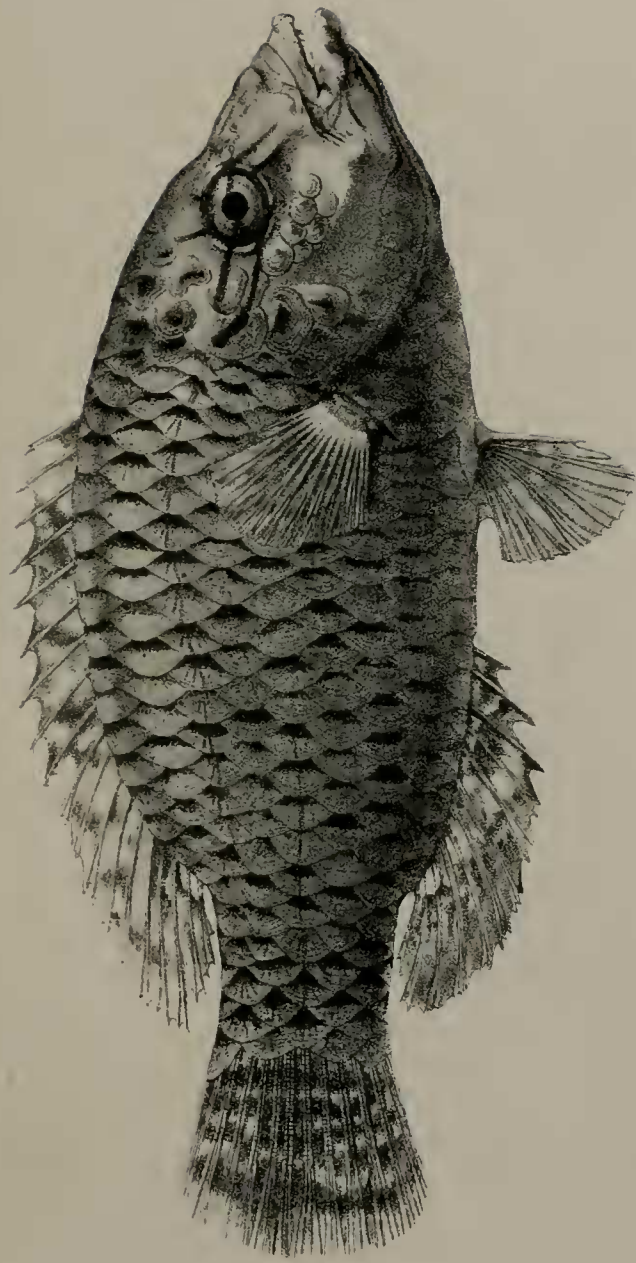




GH For d. R. Mintearn.

A. MYXUS LEUCISCUS . B. PLATYGLOSSUS NIGROMACULATUS . C. NANNETHIOPS . UNITÆNIATUS .  
Mintearn Bros imp





G. H. Ford, C. L. Giesbach

CHILINUS GODEFFROYI

Montenapoli os. n. p.



length of the head. Caudal fin rounded. Greyish (in spirits), head and body densely covered with deep-black spots about as large as the eye; an immaculate stripe along the uppermost part of the back and the base of the anal. A series of round black spots along the base of the dorsal and anal fins; caudal fin nearly without markings.

One specimen,  $2\frac{1}{2}$  inches long (no. 67), from the Godeffroy Museum; it was obtained at Savay (Samoa Islands).

*PLATYGLOSSUS NOTOPSIS*, Blkr.

We have received from the Godeffroy Museum a specimen from Savay of a uniform black colour; however, the two ocelli on the dorsal fin are present, and it has also thirteen soft dorsal rays, so that it must be regarded as merely a variety.

*HEMICHROMIS SUBOCELLATUS*. (Plate LXVII. fig. C.)

D.  $\frac{14}{8}$ . A.  $\frac{3}{7}$ . L. lat. 25. L. transv.  $2\frac{1}{2}/10$ .

The height of the body is two sevenths or one third of the total length (without caudal), the length of the head one third. Snout as long as the eye, the maxillary extending to the vertical from the front margin of the orbit. Three series of scales on the cheek. Front teeth of the upper jaw not enlarged. The spinous dorsal fin is rather low, the longest spine being not much more than one third of the length of the head. The soft dorsal and anal sometimes produced into a filament. Brown, operculum with an indistinct blackish spot. The following ocellated spots may be present or absent:—one on the middle of the anterior soft dorsal rays, and one or two on the upper caudal rays. The remainder of the caudal and the anal blackish, with yellowish specks.

Gaboon. Three specimens,  $2\frac{1}{2}$  inches long, are in the possession of the author, and will be deposited in the British Museum.

*BLENNODESMUS*, g. n. *LYCODID*.

Body elongate, compressed, band-like, rudimentary scales being imbedded in the mucous integuments of the body. Lateral line rather indistinct. Eye of moderate size. Head compressed, with the snout pointed and the lower jaw prominent. Small conical teeth in both jaws; palate smooth. Barbels none. Gill-openings and vertical fins as in the other genera of this family. Ventral fins reduced to two small and short filaments, jugular. No prominent anal papilla.

*BLENNODESMUS SCAPULARIS*. (Plate LXVII. fig. A.)

D. + C. + A. 50 + 9 + 40. V. 1.

The height of the body is one twelfth of the total length (without caudal), the length of the head one seventh. Interorbital space convex, much narrower than the eye, the diameter of which is one fifth of the length of the head; snout pointed, compressed, rather longer than the eye. The maxillary extends beyond the front mar-

gin of the orbit. The vent is twice as distant from the extremity of the caudal as from the snout. The dorsal fin commences above the posterior half of the pectoral, and is lower than the body; caudal fin rounded. The anal commences immediately behind the vent. Pectoral half as long as the head. Ventrals close together, reduced to a pair of fine filaments about as long as the eye. Body brownish, marbled with darker, sides of the head with small round yellowish spots; a black yellow-edged ocellus in the scapulary region; an undulated yellowish line along the middle of the nape and head; fins greyish.

One specimen, 3 inches long (no. 364), from the Godeffroy Museum; it was obtained at Port Mackay (North-east Australia).

#### HALIDESMUS, g. n.

This genus may be referred to the group *Brotulina*, of the family *Ophidiidæ*.

Body elongate, compressed, band-like, covered with minute scales, and with three lateral lines on each side. Eye of moderate size. One long dorsal and anal, not continuous with the caudal. Ventrals reduced to a pair of short filaments, close together, scarcely in front of the pectorals. A series of conical teeth in each jaw, none on the palate. Lower jaw somewhat projecting beyond the upper; barbels none. Six branchiostegals; gill-opening wide; pseudobranchiæ none. No anal papilla.

#### HALIDESMUS SCAPULARIS. (Plate LXVII. fig. B.)

D. 64. A. 48. C. 11. V. 2.

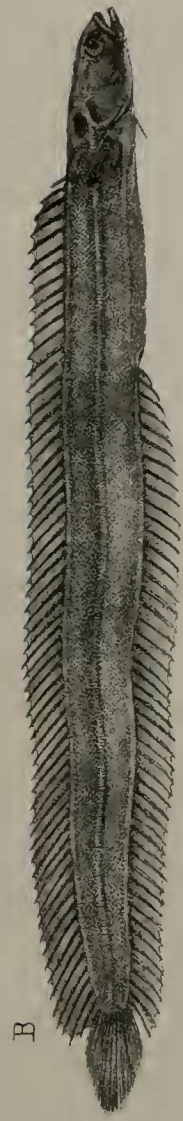
The height of the body is one sixteenth of the total length (without caudal), the length of the head one tenth. Snout as long as the diameter of the eye, which is one fifth of the length of the head. The maxillary does not extend to below the middle of the eye; mandibular joint below the posterior margin of the orbit. The teeth are comparatively strong; there are a few smaller ones behind the principal series with which each jaw is armed. Beside the lateral line which runs along the median line of the fish, there is another along the base of the dorsal fin, and a third along the base of the anal. The latter is split up into two branches opposite to the vent, one branch following the median line of the abdomen, and the other running along the side of the abdomen; the two branches are reunited below the pectoral. The vent is twice as distant from the root of the caudal as from the end of the snout. The dorsal fin commences above the extremity of the pectoral, is not quite as high as the body, and subcontinuous with the caudal. Caudal fin rounded, nearly as long as the head. The anal fin is distinctly separated from the caudal. Pectoral fin well developed, as long as the postorbital part of the head. Each ventral reduced to a very small and short filament, which, however, contains two rays. Brown, fins black; an ovate deep-black spot in the scapulary region, above the pectoral fin.



C



A



B

CH. Ford.

A. BLENNODESMUS SCAPULARIS. B. HALIDESMUS SCAPULARIS. C. HEMICHROMIS SUBOCELLATUS

Mintern Bros. imp.





Two specimens, 5 inches long, formed part of a collection from Port Elizabeth (Port Natal). Purchased.

**PSEUDOPHYCIS PEREGRINUS.**

D. 7 | 62 (ca.). A. 66 (ca.). V. 3.

The height of the body is less than the length of the head, which is two ninths of the total (without caudal). Vent at only a short distance behind the base of the pectoral; tail tapering into a very narrow band, the extremity of which is surrounded by the caudal fin; however, the vertical fins remain separate from one another. Head rather broader than deep, its greatest width being two thirds of its length. Interorbital space concave, its width being less than the diameter of the eye, which is one fourth of the length of the head, and equals that of the snout. Snout broad, obtuse, rounded, with the upper jaw overlapping the lower; the maxillary extends to below the middle of the eye. Barbel shorter than the eye. Vertical fins of moderate depth, with very fine fin-rays; the first dorsal commences opposite to the base of the pectoral. Pectoral as long as the head without snout. The ventral filament is jugular, extending beyond the origin of the anal, and composed of one longer and two shorter rays. Scales minute and deciduous. Reddish olive (in spirits), abdomen black.

Dr. A. B. Meyer has sent several examples from Manado; but they were so soft and decomposed that only one could be saved for description and preservation. It is 5 inches long. These fishes live evidently at great depths, which accounts also for the bad state in which they arrived, as it is most difficult to preserve deep-sea fishes after they have been removed from the condition of atmospheric pressure to which they were exposed. Also the stomach is protruding into the mouth, a common occurrence in fishes taken from great depths, and provided with an air-bladder.

The discovery of this fish is of the greatest interest, inasmuch as it is the first instance of a true Gadoid being found in the East-Indian archipelago, *Bregmaceros* being a much less typical form of this family. The distribution of ichthyic types at great depths is very different from that on the surface of the oceans; and in elucidating the facts of the geographical distribution of marine fishes, it is as important to distinguish between the vertical faunæ as between the horizontal.

The two other species of *Pseudophycis* known inhabit the coasts of New Zealand and South Australia.

**NANNÆTHIOPS (g. n. TETRAGONOPTERIN.).**

Dorsal fin placed in the middle of the length of the body, above the ventrals; anal short. Adipose fin small. Body of moderate depth, covered with scales of moderate size. Belly rounded. Lateral line present. Cleft of the mouth narrow; teeth small, in a single series in both jaws, with a simple notch. Maxillary and palate toothless.